

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A data forwarding controller for performing data forwarding control via a network, comprising:

a plurality of data input/output ports;

means for storing a MAC learning table in which a MAC address of data for forwarding is associated with an output port; and

a control section for updating said MAC learning table,

wherein said control section is configured to set, for a mobile node, in said MAC learning table, a plurality of entries associating different output ports with a MAC address of said mobile node, and output data addressed to said MAC address of said mobile node received via said network, to said plurality of output ports in parallel, based on said plurality of entries set in said MAC learning table, and

said control section is configured to set an entry in said MAC learning table as an additional entry based on a MAC address of a next access point contained in a handover start message received from said mobile node, wherein said additional entry sets a port to which said next access point is connected, as an output port corresponding to said MAC address of said mobile node, and output said data addressed to said MAC address of said mobile node received via said network in parallel, to said output ports listed in said plurality of entries as to said MAC address of said mobile node set in said MAC learning table, wherein said output ports are a plurality of ports to which a current access point and said next access point of said mobile node are connected.

Claim 2 (Original): The data forwarding controller according to claim 1, wherein said control section is configured to set a plurality of entries respectively setting a port to which a

current access point of said mobile node is connected and port(s) to which one or more next access points of said mobile node is connected, as output ports corresponding to said MAC address of said mobile node, and output said data addressed to said MAC address of said mobile node received via said network to said plurality of output ports set in said plurality of entries in parallel.

Claim 3 (Canceled).

Claim 4 (Currently Amended): The data forwarding controller according to claim 1 [[3]], wherein said control section is configured to transmit a handover setting completion message to said mobile node from which said handover start message is received, on condition that said setting of said additional entry in said MAC learning table based on said handover start message is completed.

Claim 5 (Original): The data forwarding controller according to claim 1, wherein said control section is configured to delete, based on a MAC address of an old access point contained in a handover end message received from said mobile node, an entry setting a port to which said old access point is connected, as an output port corresponding to said MAC address of said mobile node, from said MAC learning table.

Claim 6 (Previously Presented): The data forwarding controller according to claim 1, wherein said control section is configured to receive data from access points performing data forward to said mobile node, and set an entry in MAC learning table corresponding to output ports for MAC addresses of said access points, based on said data.

Claim 7 (Original): A communication terminal apparatus of a mobile type which performs data transmission/reception via a network and which changes access points based on data receiving conditions, wherein said communication terminal apparatus is configured to acquire a MAC address of a next access point to which said communication terminal apparatus is scheduled to be connected next, and broadcast a handover start message containing said acquired MAC address of said next access point, and perform a handover process on condition that said communication terminal apparatus receives a handover setting completion message from a data forwarding controller as a response to said handover start message.

Claim 8 (Original): The communication terminal apparatus according to claim 7, wherein said communication terminal apparatus is configured to perform a background scanning process by which all wireless channels are periodically scanned, to acquire and store a source MAC address of a received beacon as said MAC address of said next access point.

Claim 9 (Original): The communication terminal apparatus according to claim 7, wherein said communication terminal apparatus is configured to re-transmit said handover start message for a time period from transmission of said handover start message to reception of said handover setting completion message.

Claim 10 (Original): The communication terminal apparatus according to claim 7, wherein said communication terminal apparatus is configured to transmit to said data forwarding controller from which said handover setting completion message is received or broadcast, a handover end message containing a MAC address of an old access point which

said communication terminal apparatus has disconnected, after said handover process has been performed.

Claim 11 (Original): A data communication system comprising a communication terminal apparatus of a mobile type which performs data transmission/reception via a network and which changes access points based on data receiving conditions, and a data forwarding controller which performs data forwarding control via said network,

wherein said communication terminal apparatus is configured to acquire a MAC address of a next access point to which said communication terminal apparatus is scheduled to be connected next, and broadcast a handover start message containing said MAC address of said acquired next access point;

said data forwarding controller is configured to set an entry in a MAC learning table as an additional entry based on said MAC address of said next access point contained in said handover start message received from said communication terminal apparatus, wherein said entry sets a port to which said next access point is connected, as an output port corresponding to a MAC address of said communication terminal apparatus; and

output data addressed to said MAC address of said communication terminal apparatus received via said network, in parallel to output ports listed in a plurality of entries as to said MAC address of said communication terminal apparatus set in said MAC learning table, wherein said output ports are a plurality of ports to which a current access point and said next access point of said communication terminal apparatus are connected.

Claim 12 (Original): The data communication system according to claim 11, wherein said communication terminal apparatus is configured to perform a handover process on

condition that said communication terminal apparatus receives a handover setting completion message from said data forwarding controller as a response to said handover start message.

Claim 13 (Original): The data communication system according to claim 11, wherein said data forwarding controller is configured to transmit a handover setting completion message to said communication terminal apparatus from which said handover start message is received, on condition that said setting of said additional entry in said MAC learning table based on said handover start message is completed.

Claim 14 (Original): The data communication system according to claim 11, wherein said data forwarding controller is configured to delete, based on a MAC address of an old access point contained in a handover end message received from said communication terminal apparatus, an entry setting a port to which said old access point is connected, as an output port corresponding to said MAC address of said communication terminal apparatus, from said MAC learning table.

Claim 15 (Currently Amended): A method of controlling data forwarding via a network, comprising the steps of:

(a) setting, for a mobile node, in a MAC learning table in which a MAC address of data for forwarding is associated with an output port, a plurality of entries associating different output ports with a MAC address of said mobile node; and

(b) outputting data addressed to said MAC address of said mobile node received via said network, to said plurality of output ports in parallel based on said plurality of entries set in said MAC learning table,

wherein said step (a) comprises setting an entry in said MAC learning table as an additional entry based on a MAC address of a next access point contained in a handover start message received from said mobile node, wherein said additional entry sets a port to which said next access point is connected, as an output port corresponding to said MAC address of said mobile node; and said step (b) comprises outputting said data addressed to said MAC address of said mobile node received via said network, in parallel to said output ports listed in said plurality of entries as to said MAC address of said mobile node set in said MAC learning table, wherein said output ports are a plurality of ports to which a current access point and said next access point of said mobile node are connected.

Claim 16 (Original): The method according to claim 15, wherein said step (a) comprises setting a plurality of entries respectively setting a port to which a current access point of said mobile node is connected and port(s) to which one or more next access points of said mobile node is connected, as output ports corresponding to said MAC address of said mobile node; and said step (b) comprises outputting said data addressed to said MAC address of said mobile node received via said network, to said plurality of output ports set in said plurality of entries in parallel.

Claim 17 (Canceled).

Claim 18 (Currently Amended): The method according to claim 15 [[17]], further comprising the step of:

transmitting a handover setting completion message to said mobile node from which said handover start message is received, on condition that said setting of said additional entry in said MAC learning table based on said handover start message is completed.

Claim 19 (Original): The method according to claim 15, further comprising the step of:

deleting, based on a MAC address of an old access point contained in a handover end message received from said mobile node, an entry setting a port to which said old access point is connected, as an output port corresponding to said MAC address of said mobile node, from said MAC learning table.

Claim 20 (Previously Presented): The method according to claim 15, further comprising the step of:

receiving data from access points performing data forwarding to said mobile node, and setting an entry corresponding to output ports for MAC addresses of said access points in said MAC learning table, based on said data.

Claim 21 (Original): A method of performing a handover process on a communication terminal apparatus of a mobile type which performs data transmission/reception via a network and which changes access points based on data receiving conditions, said method comprising the steps of:

(a) acquiring a MAC address of a next access point to which said communication terminal apparatus is scheduled to be connected next;

(b) broadcasting a handover start message containing said acquired MAC address of said next access point; and

(c) performing said handover process on condition that a handover setting completion message is received from a data forwarding controller as a response to said handover start message.

Claim 22 (Original): The method according to claim 21, wherein said step (a) comprises performing a background scanning process by which all wireless channels are periodically scanned, to acquire and store a source MAC address of a received beacon as said MAC address of said next access point.

Claim 23 (Original): The method according to claim 21, further comprising the step of:

re-transmitting said handover start message for a time period from transmission of said handover start message to reception of said handover setting completion message.

Claim 24 (Original): The method according to claim 21, further comprising the step of:

transmitting to said data forwarding controller from which said handover setting completion message is received or broadcasting, a handover end message containing a MAC address of an old access point which said communication terminal apparatus has disconnected, after said handover process has been performed.

Claim 25 (Original): A data communication method comprising a communication terminal apparatus of a mobile type which performs data transmission/reception via a network and which changes access points based on data receiving conditions, and a data forwarding controller which performs data forwarding control via said network,

wherein said communication terminal apparatus acquires a MAC address of a next access point to which said communication terminal apparatus is scheduled to be connected next, and broadcasts a handover start message containing said MAC address of said acquired next access point;



said data forwarding controller sets an entry in a MAC learning table as an additional entry based on said MAC address of said next access point contained in said handover start message received from said communication terminal apparatus, wherein said additional entry sets a port to which said next access point is connected, as an output port corresponding to a MAC address of said communication terminal apparatus; and

outputs data addressed to said MAC address of said communication terminal apparatus received via said network, in parallel to output ports listed in a plurality of entries as to said MAC address of said communication terminal apparatus set in said MAC learning table, wherein said output ports are a plurality of ports to which a current access point and said next access point of said communication terminal apparatus are connected.

Claim 26 (Original): The data communication method according to claim 25, wherein said communication terminal apparatus further performs a handover process on condition that said communication terminal apparatus receives a handover setting completion message from said data forwarding controller as a response to said handover start message.

Claim 27 (Original): The data communication method according to claim 25, wherein said data forwarding controller further transmits a handover setting completion message to said communication terminal apparatus from which said handover start message is received, on condition that said setting of said additional entry in said MAC learning table based on said handover start message is completed.

Claim 28 (Original): The data communication method according to claim 25, wherein said data forwarding controller further deletes, based on a MAC address of an old access point contained in a handover end message received from said communication terminal

apparatus, an entry setting a port to which said old access point is connected, as an output port corresponding to said MAC address of said communication terminal apparatus, from said MAC learning table.

Claim 29 (Currently Amended): A computer readable medium including computer executable instructions, wherein the instructions, when executed by a processor, cause the processor to perform a method ~~computer program described~~ for executing a data forwarding controlling process via a network on a computer system, said method ~~computer program~~ comprising the steps of:

setting, for a mobile node, in a MAC learning table in which a MAC address of data for forwarding is associated with an output port, a plurality of entries associating different output ports with a MAC address of said mobile node; and

outputting data addressed to said MAC address of said mobile node received via said network, to said plurality of output ports in parallel based on said plurality of entries set in said MAC learning table,

wherein said step setting includes setting an entry in said MAC learning table as an additional entry based on a MAC address of a next access point contained in a handover start message received from said mobile node, wherein said additional entry sets a port to which said next access point is connected, as an output port corresponding to said MAC address of said mobile node; and said outputting data includes outputting said data addressed to said MAC address of said mobile node received via said network, in parallel to said output ports listed in said plurality of entries as to said MAC address of said mobile node set in said MAC learning table, wherein said output ports are a plurality of ports to which a current access point and said next access point of said mobile node are connected.

Claim 30 (Currently Amended): A computer readable medium including computer executable instructions, wherein the instructions, when executed by a processor, cause the processor to perform a method ~~computer program described~~ for executing a handover process on a computer system performed by a communication terminal apparatus of a mobile type which performs data transmission/reception via a network and which changes access points based on data receiving conditions, said method ~~computer program~~ comprising the steps of:

acquiring a MAC address of a next access point to which said communication terminal apparatus is scheduled to be connected next;

broadcasting a handover start message containing said acquired MAC address of said next access point; and

performing said handover process on condition that a handover setting completion message is received from a data forwarding controller as a response to said handover start message.